

REMARKS

Claims 1-37 are pending after this amendment.

Applicants are amending claim 28 in the Amendment and Response. These changes are believed not to introduce new matter, and their entry is respectfully requested.

In view of the Amendments herein and the Remarks that follow, Applicants respectfully request that Examiner reconsider all outstanding rejections, and withdraw them.

Response to Rejection Under 35 USC § 101

In the 3rd paragraph of the Office action, Examiner has rejected claims 28-37 under 35 USC § 101, as allegedly being directed to non-statutory subject matter. This rejection is respectfully traversed.

As amended, claim 28 recites a “computer system ... having a computer-readable memory containing a computer program product comprising ...” (emphasis added). The claimed invention is a tangible product which produces a tangible result. Applicants submit that claim 28 is directed to a statutory computer program product because it recites functional material encoded on a computer-readable medium. See MPEP 2106.IV.B.1.

Applicants respectfully request that Examiner withdraw the § 101 rejection to claim 28 and dependent claims 29-37.

Response to Rejection Under 35 USC 103(a)

In the 5th paragraph of the Office Action, Examiner rejects claims 1-37 under 35 USC § 103(a). Claims 1-6, 10-11, 14-17, 18-20, 24-25, 27-30, 34-35, and 37 are rejected as allegedly being unpatentable over Bendert et al. (US Patent No. 5,761,678, hereinafter

“Bendert”). Claims 7-9, 21-23, and 31-33 are rejected as allegedly being unpatentable over Bendert in view of KaczmarSKI et al (US Patent No. 7,072,915, hereinafter “KaczmarSKI”). Claims 12, 13, 26, and 36 are rejected as allegedly being unpatentable over Bendert in view of KaczmarSKI and Bodilsen (US Patent No. 6,684,226, hereinafter “Bodilsen”). This rejection is respectfully traversed.

Claim 1 recites a method for in-place preservation of file system objects during a clone operation comprising, *inter alia*, the following:

...

the cloning manager identifying at least one protected area within the boundaries reserved for the file system to be created by the clone operation;

the cloning manager identifying at least one in-place file system object at least partially within the boundaries to be preserved during the clone operation; ...

the cloning manager ensuring that each in-place file system object at least partially within the boundaries to be preserved during the clone operation is not located in a protected area; and

the cloning manager creating the file system during the clone operation only in locations within the boundaries in which no in-place file system object to be preserved is located.

(emphasis added)

As can be seen, the claim recites identifying a protected area and an in-place file system object. The protected area will hold a file system created during the clone operation. The in-place file system object is to be preserved during the clone operation. The cloning manager ensures that there are no in-place file system objects in the protected area, and the cloning manager creates the clone file system while preserving (i.e., not overwriting) the in-place file system object. The claimed invention beneficially allows for cloning a file system while preserving certain file system objects already existing in the boundaries where the cloned file system is to be created.

Claims 18 and 28 contain language similar to claim 1 and all arguments presented below regarding claim 1 equally apply to claims 18 and 28.

The Examiner cites only Bendert when rejecting claim 1. Bendert discloses copying data from a source (called a “base storage area” in Bendert) to a destination (called a “clone storage area” in Bendert) using a technique that defers the copying of data and metadata until the data located at the source have been modified (Bendert, col. 4, lines 17-24). Bendert, however, does not address the issue of preservation of data already existing at the destination.

Accordingly, Bendert does not disclose “the cloning manager identifying at least one in-place file system object at least partially within the boundaries to be preserved during the clone operation.” Since Bendert does not address the issue of preservation of data already existing at the destination, Bendert has no concept of an in-place file system object to be preserved, where the object is at least partially within the boundaries of a file system to be created by a clone operation. The examiner cites the abstract of Bendert as disclosing this element. However, the abstract does not mention the preservation of any objects already existing in the destination file system, or the “clone storage area” as it is referred to in Bendert.

Bendert further does not disclose “the cloning manager ensuring that each in-place file system object at least partially within the boundaries to be preserved during the clone operation is not located in a protected area.” Since Bendert is not concerned with the preservation of in-place file system objects, Bendert is also not concerned with ensuring that such objects are not located in a protected area. The examiner asserts that Bendert discloses this element at col. 2, lines 51-58, which describes the creation of the clone storage area and the copying of data to the clone storage area (and updating of metadata) as the base storage area is modified. This portion does not disclose preserving

already existing areas of the clone storage area and ensuring that those areas are not within protected areas.

Finally, Bendert does not disclose “the cloning manager creating the file system during the clone operation only in locations within the boundaries in which no in-place file system object to be preserved is located.” The examiner cites col. 3, lines 63-67 for this element. This section describes a Copied PBNs Table (“CPT”) table listing block numbers which have been copied from the base storage area to the clone storage area. The cited text does not disclose creation of the clone file system only in locations in which no in-place file system object to be preserved is located. As stated at col. 3, lines 66-67, a CPT table only applies to a base storage area, not a clone storage area.

The other references cited by examiner in rejecting various dependent claims do not remedy the deficiencies of Bendert with respect to the arguments made above regarding claim 1. KaczmarSKI describes a cloning system similar to that in Bendert where the copying of data from the source to the clone is deferred until modification of the source. Bodilsen addresses the problem of recovery from a crash and discloses a transaction-based versioning system. Neither of these references is concerned with the preservation of objects already existing in the clone file system.

Based on the above remarks, Applicants respectfully submit that for at least these reasons claims 1, 18, and 28 are patentably distinguishable over the cited reference. Therefore, Applicants respectfully request that Examiner reconsider the rejection, and withdraw it. As to the dependent claims, because claims 2-17 are dependent on claim 1, claims 19-27 are dependent on claim 18, and claims 29-37 are dependent on claim 28, all arguments advanced above with respect to claims 1, 18, and 28 are hereby incorporated so as to apply to these dependent claims.

On the basis of the above remarks, consideration of this application and the early allowance of all claims herein are requested.

Should the Examiner wish to discuss the above remarks, or if the Examiner believes that for any reason direct contact with Applicants' representative would help to advance the prosecution of this case to finality, the Examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,
Andrew Philip Haslam et al.

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By: /Brian Hoffman/
Brian M. Hoffman
Reg. No. 39,713
Fenwick & West LLP
275 Battery Street
San Francisco, CA 94111
Phone: (415) 875-2484
Fax: (415) 281-1350